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**Ratings of female genital attractiveness pre- and post-genital cosmetic  
surgery differ by age and gender**

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**Thesis**

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## **Abstract**

### **Ratings of female genital attractiveness pre- and post-genital cosmetic surgery differ by age and gender**

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*Abstract.* To understand how genital self-image affects sexual well-being, it is important to consider its influence on sexual function and distress. It is also important to learn what type of genital appearance is considered visually appealing to men and women, and whether genitalia modified by cosmetic surgery are judged as more attractive compared to unmodified genitalia. The present study assessed women's genital self-image, sexual functioning and sexual distress in order to elucidate the relationship between these three elements of sexual well-being. Additionally, genital photographs were presented to men and women in order to assess conceptions of female genital attractiveness relative to surgical status (i.e. before and after). Four hundred and seventy-six women ( $M$  age = 24.38) completed online questionnaires to assess genital self-image, sexual satisfaction, functioning and distress. The female sample along with 429 men ( $M$  age = 27.47) also

reviewed pictures of pre- and post-surgery genitalia and rated them on levels of attractiveness. The Female Genital Self-Image Scale, the Relational Concern and Personal Concern subscales of the Sexual Satisfaction Scale – Women, and the Female Sexual Functioning Index were administered. Genital self-image was positively correlated with functioning variables including arousal, lubrication, orgasm, satisfaction and pain, and negatively correlated with sexual distress. Men rated unaltered and altered genitalia as more attractive than women; older participants rated unaltered and altered genitalia as more attractive than younger participants, and men and women of all ages found altered genitalia more attractive than unaltered genitalia. Women with positive genital self-image experience higher levels of sexual functioning and lower levels of sexual distress. Female genitalia modified by genital cosmetic surgery are considered more attractive regardless of age and gender.

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## **Chapter 1: *Introduction***

Twelve-month prevalence estimates based on national representative samples suggest that as high as 43% of all American women experience sexual difficulties<sup>1</sup>, making them one of the most common types of health complaints. As enjoyment of sexual activity is important to women in the US as well as worldwide <sup>2</sup>, the widespread prevalence of sexual problems presents a potential detriment to well-being for a significant portion of the population. Impairments in sexual function may be attributable to myriad physiological (e.g., hormonal) and/or psychological factors. Accumulating research suggests body image is an important psychological factor in women's sexual well-being.

Body image is a key concept to consider when determining what makes sex satisfying or distressing, as concern about one's physical appearance can diminish one's sexual confidence, interest and enjoyment<sup>3</sup>. A discrepancy between actual physical appearance and perceived body image can prove problematic as a woman's internal cognitions about her external characteristics impact her personal sexual experiences<sup>4, 5</sup>. Women may choose to avoid engaging in sexual activity simply because they feel self-conscious about their bodies, which can negatively impact their romantic and sexual relationship with their partners<sup>6, 7</sup>.

While body image-induced sexual avoidance is not classified as a sexual dysfunction, concerns of this type may inhibit women from participating in and enjoying sex<sup>8</sup>, which can affect both sexual functioning and sexual satisfaction. Recent research has revealed that specific elements of body image may have a unique effect on women's

sexual experiences. In one study, appearance-related thoughts were found to inhibit sexual satisfaction in female college students while they engaged in sexual activity<sup>9</sup>. In the same population, young women unsatisfied with their sex lives reported greater dissatisfaction with their body images compared to women who stated they had satisfying sex lives<sup>10</sup>. In another study of women aged 18-49, sexual satisfaction was predicted by body esteem and one's thoughts about one's appearance, while sexual functioning was positively correlated with these and other body image variables, including weight concern and attractiveness<sup>11</sup>.

While it is clear that general body image has a pronounced effect on women's sexual well-being, researchers have recently narrowed their focus to genital self-image as a subfield of body image research that may uniquely contribute to women's sexual concerns. The idea of genital self-image originated with the concept of genital identity, viewed as attitudes and feelings towards oneself that are due to experiences indirectly or directly involving one's genitals<sup>12</sup>. Within this framework, opinions and concepts about genitalia dictated by external sociocultural norms as well as individual interpersonal experiences can have a profound effect on one's genital identity and self-image<sup>13</sup>, be it positive or negative.

Recently, studies have examined the relationship between genital self-image and sexual well-being, particularly satisfaction and functioning. One study of college students found that positive genital perceptions are related to greater engagement in and enjoyment of sexual activities<sup>14</sup>; more specifically, satisfaction and comfort with one's genitals was significantly correlated with enjoyment of penetrative intercourse as well as



oral sex. Similarly, one study revealed that women with positive genital self-images exhibit more sexual energy and achieve orgasm more quickly<sup>15</sup>, while women with high levels of genital dissatisfaction and genital self-consciousness have lower levels of sexual satisfaction<sup>16</sup>. A study of women seeking treatment for sexual dysfunction revealed that positive genital self-image negatively correlates with sexual distress and positively correlates with sexual desire<sup>13</sup>. Researchers piloting a genital self-image questionnaire among a national sample of women found results indicating that genital self-image was strongly correlated with all factors of female sexual functioning, including arousal, desire, lubrication, orgasm, pain and satisfaction<sup>17</sup>. In the same study, women's genital self-image scores were also positively associated with increased masturbation frequency and vibrator use within the past month.

The impact of a woman's genital self-image is not limited to sexual activity alone; it may prove to be a key factor in her desire to undergo female genital cosmetic surgery, an increasingly common form of plastic surgery. Also referred to as genital plastic surgery or vaginal rejuvenation, it involves the modification of a woman's genitals for aesthetic and/or functional reasons<sup>18</sup>. Though female genital cosmetic surgery is indicated for the functional impairment and aesthetic improvement of sexual organs<sup>18</sup>, researchers have reported a general trend of women without functional problems undergoing the surgery for aesthetic reasons alone. As this type of surgery is a recent phenomenon, it is likely that age effects come into play when considering the characteristics of women who choose to undergo genital cosmetic surgery as well as the reasons they offer. In a sample of 131 patients with an average age of 36, 37% had surgery for aesthetic purposes

alone<sup>19</sup>, including attractiveness, as women who undergo genital cosmetic surgery tend to view their genitalia as unattractive<sup>20</sup>. Patients between the ages of 16 and 45 interviewed prior to surgery have provided insight into their motivating factors—one woman stated that she had “excess tissue that doesn’t look quite right” and that her vagina has “no perfect symmetry”, while another wished to look “a bit more feminine” and “a bit more attractive” for her male partner<sup>21</sup>. Though these particular patients reported undergoing surgery for purely aesthetic reasons, they nevertheless represent only a small sample of women’s opinions about female genitalia. To our knowledge, no studies have examined the general population’s opinions regarding female genital attractiveness. It remains unclear how women (and men) generally classify female genitalia in terms of attractiveness, how different age groups of both genders classify genital attractiveness, and whether post-genital surgery vaginas are considered more attractive than pre-genital surgery vaginas by women and men of all ages at large.

## **Chapter 2: *Aim***

The purpose of the present study was to replicate and extend prior research on genital self-image in women by further elucidating the relationships between genital self-image and sexual satisfaction, sexual functioning and sexual distress. Additionally, we sought to determine whether post-surgical genitalia are considered more attractive compared to unmodified genitalia by women and men in the general population. We also sought to examine potential age effects across genders in terms of the evaluation of genital attractiveness.

## **Chapter 3: *Methods***

### **GENITAL SELF-IMAGE AND SEXUAL WELL-BEING IN WOMEN**

#### **Participants and Procedure**

The sample of 476 women ( $M$  age = 24.38,  $SD$  = 12.07) was recruited from a large public university in the southern United States through the psychology department's experimental research program and through nationwide responses to online classified advertising websites (e.g., [www.craigslist.org](http://www.craigslist.org)). Of the sample, 58% identified themselves as White/European-American, 16% Hispanic/Latina, 12% Asian, 8% Black/African-American, 1% Native Hawaiian/Pacific Islander, and 4% Other. 9% of the sample was married, 38% were single, and 2% were divorced. Overall, 60% of the women were in a sexual relationship. The majority of women were heterosexual (95%); 2% were bisexual and 3% were homosexual. Participation in the study involved completing online questionnaires on a website designed to host psychological data that did not collect the IP addresses of the computers used to complete the surveys. Before gaining access to the anonymous survey, participants were required to read an online consent form. No personally identifying information was collected with the exception of city and state of residence. After completing the survey, each participant was debriefed and given a random identification number that served as a confirmation of survey completion.

## **Main Outcome Measures**

### ***Female Genital Self-Image***

The Female Genital Self-Image Scale (FGSIS)<sup>17</sup> is 4-item measure used to assess women's genital self-image that has demonstrated good construct validity (Cronbach's alpha between .73 and .83) and high internal reliability (.86) in heterosexual women. Scoring the FGSIS involves summing all items; higher scores indicate a higher genital self-image.

### ***Sexual Functioning***

The Female Sexual Function Index (FSFI)<sup>22</sup> is a 19-item measure assessing sexual functioning, featuring items applicable to six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. The FSFI has demonstrated excellent reliability (full scale Cronbach's alpha = .97; desire = .92, arousal = .95, lubrication = .96, orgasm = .94, satisfaction = .89, pain = .94) and validity in women with and without diagnoses of female sexual arousal disorder<sup>22</sup>, female orgasmic disorder and hypoactive sexual desire disorder<sup>23</sup>. Domain scores are obtained by summing individual items, and higher scores indicate higher levels of functionality.

### ***Sexual Distress***

The Relational Concern and Personal Concern subscales of the Sexual Satisfaction Scale for Women (SSS-W)<sup>24</sup> were used to assess sexual distress. The subscales have demonstrated high reliability (relational concern = .88, personal concern = .90). The relational concern subscale assesses distress due to the impact of their sexual problems on their partner and relationship (sample item: "I'm worried that my partner will become

frustrated with my sexual difficulties”), and the personal concern subscale assesses personal distress due to sexual problems (sample item: “I’m so distressed about my sexual difficulties that it affects my own well-being”). Each subscale consists of five items which are summed so that higher scores indicate less distress. (Note: items in the personal concern subscale were reverse coded prior to summing so that higher scores indicated less distress).

#### **ATTRACTIVENESS RATINGS OF FEMALE GENITALIA PRE- AND POST-GENITAL COSMETIC SURGERY**

##### **Participants and Procedure**

The sample of women in the first portion of the study also participated in the second portion of the study, along with 429 men ( $M$  age = 27.47,  $SD$  = 8.995) who were recruited in the same manner as the female sample. Of the male sample, 65% identified themselves as White/European-American, 13% Hispanic/Latino, 12% Asian, 6% Black/African-American, 1% Native Hawaiian/Pacific Islander, and 3% Other. 17% of the sample was married, 49% single, and 4% divorced. Overall, 47% of the men were in a sexual relationship. The majority of men were heterosexual (97%); 1% was bisexual and 2% were homosexual.

##### **Main Outcome Measures**

###### ***Genital Photographs***

After completing a series of questionnaires to collect demographic information, all participants were presented with 34 photographs of de-identified adult female external genitalia supplied by Dr. Michael Goodman of Davis, CA, a women’s healthcare

physician certified in Minimally Invasive Gynecologic Surgery, for research purposes. Seventeen of the photographs were of unaltered genitalia and 17 were of those same genitalia after having undergone cosmetic surgery. Participants were instructed to view pictures of female genitalia and answer questions about each picture; no information regarding surgical status was provided. After providing informed consent, participants reviewed alternating pre- and post-surgery images online and rated the genitalia on attractiveness using a five-point Likert scale ranging from Very Unattractive (1) to Very Attractive (5). Each participant's responses yielded two attractiveness rating totals upon finishing the survey: pre-surgical ratings, which involved summing the scores of all pre-surgical photographs, and post-surgical ratings, calculated by summing the scores of all post-surgical photographs. For both ratings, higher scores indicated that participants found the genitalia attractive.

## **Chapter 4: *Results***

### **GENITAL SELF-IMAGE AND SEXUAL WELL-BEING IN WOMEN**

#### **Genital self-image and sexual functioning variables**

We computed Pearson product-moment correlations between FGSIS scores and FSFI domain scores. As predicted, genital self-image was significantly positively correlated (all  $p$ 's < .002) with arousal ( $r = .267$ ), lubrication ( $r = .237$ ), satisfaction ( $r = .191$ ), and pain ( $r = .177$ ), demonstrating that a more positive genital self-image is associated with greater sexual functioning across these four domains. Desire was not significantly correlated with genital self-image ( $r = .072$ ,  $p = .123$ ).

#### **Genital self-image and sexual distress variables**

Pearson product-moment correlations were computed between FGSIS scores and the SSS-W relational concern and personal concern subscale scores. Genital self-image was significantly positively associated with relational concern ( $r = .116$ ,  $p = .043$ ) but not personal concern ( $r = .069$ ,  $p = .235$ ), revealing that a positive genital self-image is associated with lessened distress associated with the impact of a woman's sexual problems on her partner and relationship, but not with personal distress associated with her sexual concerns.

### **ATTRACTIVENESS RATINGS OF FEMALE GENITALIA**

#### **By Gender**

To analyze the difference between men and women in attractiveness ratings for pre- and post-surgical genitalia, we conducted a one-way analysis of variance (ANOVA) utilizing the genders' average scores for each group of photos. The mean difference in



attractiveness ratings between genders for unaltered genitalia was significant ( $F(1, 903) = 58.259, p < .001$ , partial  $\eta^2 = .061$ ), indicating that, on average, men rated unaltered genitalia as more attractive than did women. Additionally, the mean difference in attractiveness ratings between genders for altered genitalia was significant ( $F(1, 903) = 23.369, p < .001$ , partial  $\eta^2 = .025$ ), indicating that, on average, men rated altered genitalia as more attractive than did women. The means of both genders' ratings were higher for altered genitalia (male  $M = 52.00, SD = 14.42$ ; female  $M = 47.42, SD = 14.06$ ) compared to unaltered genitalia (male  $M = 38.36, SD = 16.06$ ; female  $M = 30.83, SD = 13.59$ ), indicating that, on average, men and women across ages found altered genitalia more attractive than unaltered genitalia.

### **By Age**

Difference in attractiveness ratings for pre- and post-surgical genitalia by age were analyzed in the combined sample of men and women. Participants' ages were recoded into 4 age categories: 18-22 (Group 1,  $N = 521$ ), 23-30 (Group 2,  $N = 108$ ), 31-40 (Group 3,  $N = 102$ ), and 41+ (Group 4,  $N = 102$ ). We then conducted a one-way ANOVA utilizing the groups' average scores for each group of pre- and post-surgical photos. The mean difference in attractiveness ratings between age groups for unaltered genitalia was significant ( $F(3, 901) = 62.2843, p < .001$ , partial  $\eta^2 = .173$ ), indicating that, on average, older participants rated unaltered genitalia as more attractive than younger participants. Additionally, the mean difference in attractiveness ratings between age groups for altered genitalia was significant ( $F(3, 901) = 71.406, p < .001$ , partial  $\eta^2 = .192$ ), indicating that, on average, older participants rated altered genitalia as more

attractive than younger participants. Across gender, the rating means for all four age groups were higher for unaltered genitalia (Group 1  $M = 29.51$ ,  $SD = 12.07$ ; Group 2  $M = 36.86$ ,  $SD = 14.53$ , Group 3  $M = 42.29$ ,  $SD = 16.22$ , Group 4  $M = 47.16$ ,  $SD = 18.42$ ) compared to altered genitalia (Group 1  $M = 44.42$ ,  $SD = 13.44$ ; Group 2  $M = 53.69$ ,  $SD = 12.20$ , Group 3  $M = 57.76$ ,  $SD = 12.31$ ; Group 4  $M = 60.56$ ,  $SD = 12.46$ ), indicating that, on average, all age groups found altered genitalia more attractive than unaltered genitalia.

## **Chapter 5: *Discussion***

This study sought to replicate and extend prior research findings by further elucidating the relationship between genital self-image on women's sexual well-being as well as examine gender- and age-specific opinions of female genital attractiveness. Positive genital self-images were associated with higher levels of sexual functioning, including increased arousal, lubrication, and orgasm as well as decreased pain and increased overall satisfaction. Women with positive genital self-images also reported decreased levels of relational but not personal sexual distress. In terms of genital attractiveness, men and women of all ages found photographs of surgically altered female genitalia more attractive than unaltered female genitalia. For all genitalia photographs, male ratings of attractiveness were, on average, higher than female ratings, and older individuals' ratings were, on average, higher than younger individuals' ratings.

Our findings regarding the relationship between genital self-image and sexual functioning are consistent with Herbenick et al.'s<sup>17</sup> results pertaining to the subscales of the FSFI, with the exception of desire. This discrepancy between studies is likely due to the difference in sample sizes; Herbenick et al.<sup>17</sup> collected data from 2,056 women while our sample consisted of 476 women. Despite this, the results of both studies indicate that a negative genital self-image most likely impacts sexual functioning by making a woman feel self-conscious, and perhaps anxious, about her partner viewing and judging her genital appearance. Consistent with Barlow's<sup>25</sup> model of sexual dysfunction, this, in turn, would distract her from the processing of erotic cues and sensations necessary for arousal and orgasm. Our findings are also consistent with prior studies indicating that

appearance-based thoughts and concerns interfere with a woman's sexual functioning<sup>26-28</sup>. As noted by Herbenick et al.<sup>17</sup>, these findings may indicate that a woman's beliefs and feelings about her genitalia influence how she experiences elements of her sexual experience, including arousal or orgasm; it may alternatively suggest that a woman's sexual experiences impacts her feelings about her genitalia, or that another construct is linked to both genital self-image and sexual function. Additional research is imperative to further elucidate the nature of these relationships.

Consistent with our expectations, sexual distress was negatively correlated with female genital self-image, implying that women with positive genital self-images experience lower levels of sexually related distress. Our results are comparable to Berman et al.'s<sup>13</sup> findings regarding sexual distress and genital self-image in a clinical sample of women. The knowledge that a woman's genital self-image plays a role in her experience of sexually related distress can assist both clinicians and researchers in understanding how the development and treatment of sexual distress may be moderated by a woman's subjective perception of her genitalia and how it impacts her sexual experience.

Participants, regardless of gender or age, rated photos of modified female genitalia higher on average than unmodified genitalia. While men's attractiveness ratings of all genitalia, regardless of surgical status, were higher than women's ratings, both genders rated post-surgical genitalia as more attractive overall. Findings also revealed individuals over the age of 30 rated all vaginas as more attractive compared to individuals

under the age of 30; post-surgical genitalia were consistently rated as more attractive by participants of all ages.

While the results indicate participants preferred the appearance of post-surgical genitalia, the reasoning behind these preferences has yet to be addressed. Participants offered their opinions, but did not state what elements of the modified genitalia influenced their ratings. However, one key attribute common to all post-surgical pictures is labia minora that do not protrude beyond the labia majora and the minimal presence of pubic hair. However, this yields a question that is challenging if not impossible to answer: why are genitalia with protruding labia minora and sparse pubic hair considered unattractive?

In an examination of vaginal structures including labial length and width as well as clitoral size, researchers discovered that these measurements (and therefore individual genitalia) vary widely, refuting the notion of “normal” genitalia<sup>29, 30</sup>. The portrayal of female genitalia in popular culture, on the other hand, contrasts sharply with these findings. Researchers have sought to determine what is presented to the general public in terms of attractive genitalia, as cultural depictions of female anatomy undoubtedly impact women’s self-concepts. An examination of female media portrayals between 1953 and 2007 revealed the tendency to deemphasize individual differences and promote genitalia similar to that of a Barbie doll—poorly defined and lacking in detail, including hair<sup>31</sup>. Related to this, the concept of “genital hairlessness” is now considered the “new norm” in the United States<sup>32</sup>. Further, this perpetuation of minimal labia with little (if any) pubic hair is rooted in a historical context; elongated labia are associated with promiscuity and

marginalized groups<sup>33, 34</sup>, while Egyptian and Greek art perpetuated the idea of reduced pubic hair as sexually attractive<sup>35</sup>. These results in conjunction with those of the current study validate the concept of the “invisible labia”, defined as minimal appearance of the labia minora, as a desirable and attractive feature<sup>36</sup>.

Labia minora minimization is also evident in the particular types of procedures traditionally performed by female genital cosmetic surgeons. In a multisite outcome study of genital cosmetic surgical procedures, over half of all surgeries involved labiaplasty, defined as the removal of hypertrophied and/or elongated labia minora<sup>37</sup>. A notable trend in the reasons offered by patients who underwent surgery was the desire to look more “normal” and enhance their self-esteem, despite lack of sexual functioning concerns<sup>37</sup>, suggesting many women did not experience sexual problems but chose to undergo surgery nonetheless to modify their genital appearance simply because they considered their genitalia unattractive. This trend has left many female researchers and women’s groups (e.g. the New View Campaign) disheartened, as the media’s emphasis on vaginal rejuvenation as a remedy to low genital self-image is a solution to a problem whose sole cause is their simultaneous promotion of the attractiveness (and normalcy) of “invisible labia”<sup>38-42</sup>.

This emphasis on labia minora minimization is further evident in the current prevalence of female genital plastic surgeries. While the first surgery took place in 1984, additional media coverage and clinical reports in the late 1990s and the first decade of the 21<sup>st</sup> century introduced the notion of the “designer vagina” to the public at large<sup>38, 40</sup>. The American Society for Plastic Surgeons (ASPS) reported a 30% increase in the total

number of vaginal rejuvenation surgeries between 2005 (793) and 2006 (1,030)<sup>43</sup>, while the American Society of Aesthetic Plastic Surgery (ASAPS) reported 4,506 surgeries in 2007<sup>44</sup>. The ASAPS reported a decline in vaginal rejuvenation surgeries in 2008 (3,494) and 2009 (2,531), though the number of plastic surgery procedures overall declined as well, likely due to the economic recession<sup>45</sup>. As such, it will be interesting to monitor surgical trends over the next few years as the economy improves to determine whether vaginal rejuvenation reaches or even surpasses its prior yearly high.

## **Chapter 6: *Conclusion***

In summary, our research suggests that female genital self-image plays an important role in female sexual well-being. A positive genital self-image is associated with higher levels of sexual satisfaction and functioning as well as lower levels of sexual distress, which suggests that considering how a woman feels about her genitalia is key to understanding (and treating) sexual concerns that may develop over time. Related to this, our study revealed that one's personal concept of genital attractiveness is impacted by cultural conceptualizations of female genitalia, as men and women of all ages preferred pictures consistent with the media's portrayals of genitalia, which emphasize diminished labia size. These results in combination suggest that clinicians and researchers should consider the impact of genital self-image and cultural representations of female genitalia when examining physiological and psychological factors that contribute to the development and treatment of women's sexual concerns.



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